IT managers often forget that human nature enters into technical situations. Keep team members involved and set clear expectations.

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Remember the Human Element in IT Project Management

Consider this scenario: A restaurant manager must lead an all-star team of chefs to plan and deliver a world-class menu. Each chef has technical proficiency, creativity, drive, and a track record of successful experience in small (perhaps one-person) kitchens. But the team faces several constraints. Budgetary problems exist. The kitchen is disorganized and has missing or poor-quality utensils and cookware. Available ingredients are poor, and the restaurant has no standard recipes. The restaurant owner has not even articulated a theme. The support staff is underpaid, unappreciated, and overwhelmed. Well, you say, even with poor management, the world-class chefs can overcome these difficulties.

Think again; even with a highly skilled and motivated team, management has several challenges. Although the chefs are master chefs, each has training in a different style (such as classic French, soul, kosher, or Japanese), and some of these styles are incompatible. Not all the chefs speak the same language. Some have massive egos, and most have not worked as sous chefs for many years. Without strong leadership from the manager, it will be difficult for these chefs to succeed.

You can easily adjust the scenario into one involving software and IT professionals.

MANAGING HUMAN TEAMS: A CHALLENGE FOR IT MANAGERS

The human element is one of the most important but frequently overlooked aspects of managing IT projects. But John S. MacDonald, founder of MacDonald Dettwiler and Associates, an information systems and products company, said in his 1998 Incose symposium keynote speech, "Systems Engineering: Art and Science in an International Context," a project's success directly relates to the quality of talent employed, and, more importantly, the manner in which management deploys talent on the project.

However, IT managers too frequently view themselves as only technical managers, forgetting that human nature enters into technical situations. I use the term *IT manager* as a general term for anyone responsible for one or more other people developing, managing, installing, supporting, or maintaining IT systems and software. Other typical titles include software project manager, technical lead, senior IT developer, and so on.

Various issues in leadership theory apply to managing IT professionals. I will discuss various types of management styles later in this article, but the theme that always prevails is that no matter what type of style or combination of styles you

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choose, set reasonable expectations and strive to keep team members involved.

THE HUMAN ELEMENT OF PROJECT MANAGEMENT

Some people might not consider human resources management significant if the project team has enough technical skill. But that is not generally true. The key problem in the restaurant case, as in a similar IT organization, is that the team's dynamics make it difficult for the manager to overcome the obstacles, even with good people.

The *n*-body problem

One reason creating a good team dynamic is so difficult is that the number of working relationships grows as a polynomial function of n, the number of people on the team. I call this the n-body problem. Figure 1 depicts this problem.

In fact, you can easily prove (by induction) that for n people on a team, there are $n(n-1)/2$ possible working relationships, and any of them can sour. Further, the quality of a working relationship is not transitive. For example, Fred might work well with Jane, and Jane might work well with Bob, but this does not necessarily imply that Fred and Bob work well together. Finally, complicating these interactions are cultural differences that you must consider when building and managing teams, planning projects, and dealing with difficult personal situations, according to MacDonald. Taken another way, it is unwise to ignore interpersonal interactions and view staff as simply "headcount." As noted software developer Fred Brooks postulated in what is now known as Brooks' law, adding manpower to a late software project just makes it later (Frederick P. Brooks, *The Mythical Man-Month*, Addison-Wesley, 1975).

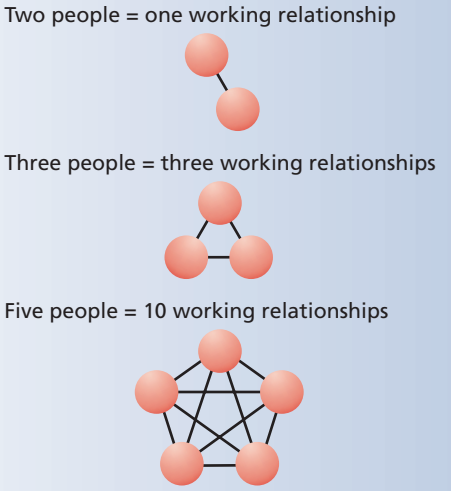
APPROACHES TO MANAGING AND LEADING TEAMS

Many management styles exist, and you will sometimes see hybrid approaches. A brief description of some of these styles can help you better understand your style and that of your boss or organization. Understanding these styles can also help you adapt them to different situations and people, as the story in the "Treating People Uniquely" sidebar explains.

Theory X: Why Do You Think They Call It Work?

Theory X is perhaps the oldest management style and it closely relates to the hierarchical, command-and-control model that military organizations and some companies use (Douglas McGregor, *The Human Side of Enterprise*, McGraw-Hill, 1960). Theory X asserts that this approach is necessary because most people inherently dislike work and will avoid it if they can get away with it. Hence, managers should coerce, control, direct, and threaten workers to get the most out of them. Ultimately, the theory holds that most people prefer being told what to do, rather than having to decide for themselves.

Figure 1. The number of working relationships grows as a function of the number of team members.



I once worked for a very senior manager whose fundamental belief was "people only do what you audit," though I believe he meant, "people only do what they don't want to do if you audit them." In any case, this is classic Theory X thinking.

Consider how the restaurant manager would fare using only Theory X. While clearly the manager has the prerogative to lay down the rules for hiring, firing, and monitoring the wait staff, for example, it is unlikely that every chef, particularly world-class chefs, wants to be interfered with in this way. In fact, such increased oversight will lead to resentment, then resistance, then, finally, high staff turnover.

Theory Y: Work Is Fun

Theory Y is the opposite of Theory X. According to the respected management theorist Douglas McGregor, Theory Y states that work is a natural and desirable activity. Hence, managers don't need to use external controls and threats to guide the organization. In fact, they can base the commitment level on the clarity and desirability of the goals set for the group. Theory Y states that most individuals actually seek responsibility and do not shirk it, as Theory X proposes.

A Theory Y manager simply needs to provide resources, articulate goals, and leave the team alone. This doesn't always work. For example, in the restaurant, while it would be best to leave menu planning and food preparation to

Treating People Uniquely

I once chatted with football player Perry Williams, who played for Bill Parcells when Parcells coached the New York Giants to two Super Bowl championships in 1987 and 1991. I asked Williams how he got along with Parcells, who regularly had in-your-face shouting matches with superstar players such as Lawrence Taylor and Phil Simms.

Perry said, though, that Parcells never shouted at him. In fact, they had one meeting at the beginning of the year to discuss what the coach expected of Williams. But because Parcells trusted Williams, he left him alone the rest of the time. In fact, the coach treated each player uniquely—his management style varied with the player's needs and personality (Bill Parcells and Jeff Coplon, *Finding a Way to Win: Principles of Leadership, Teamwork, and Motivation*, Diane Publishing Company, 1998).

the chefs, the manager must lead the way in setting the theme, approving the menu, and establishing the overall work culture of the restaurant.

Theory Z: One for All and All for One

An American, William Ouchi, articulated the Theory Z approach while studying Japanese management style (*Theory Z: How American Business Can Meet the Japanese Challenge*," Perseus Publishing, 1981). Ouchi's Theory Z philosophy is that employees will stay for life with a single employer, resulting in a strong bond with the corporation and subordination of individual identity to the company's identity.

Implicit, not explicit, control mechanisms exist under Theory Z, peer and group pressure being the most obvious. The particular corporate culture norms also provide additional implicit controls. Japanese companies are famous for their collective decision-making and responsibility at all company levels.

Theory Z management emphasizes high cross-functionality for all of its workers and discourages specialization. Most top Japanese managers have worked in all aspects of their business, from the production floor to sales and marketing. This is also true within functional groups. For example, companies will cross-train their assemblers to operate any machine on the assembly floor. Theory Z companies are notoriously slow in promoting employees, and most Japanese CEOs are over 50.

The chefs in the earlier restaurant example would not likely have the personality and loyalty to work together in a pure Theory Z setting. However, even world-class chefs develop through a process that has some similarities to Theory Z. Each works their way from kitchen hand to salad chef and various levels of apprenticeship, finally, to sous chef, chef, and head chef. This process helps chefs understand every aspect of the kitchen. Whether or not it makes a chef sympathetic to those that work in the junior positions, or whether the chef becomes bonded to the restaurant is a matter of personality, background, and so forth. In IT groups, a similar kind of apprenticeship system usually exists for inexperienced staff. Unfortunately, most employees have too short a career with any company to enjoy the benefits of full corporate cultural immersion.

Theory W

In 1989, Barry Boehm and Rony Ross wrote about the Theory W software project management paradigm ("Theory-W Software Project Management: Principles and Examples," *IEEE Trans. Software Eng.*, July 1989). For each project, Theory W focuses on

- establishing a set of win-win conditions,
- structuring a win-win software process, and
- building a win-win software product.

Win-win conditions. Those establishing a set of win-win conditions recognize that the best working relationships are those in which everyone wins. Zero-sum, win-lose, or lose-win situations can embitter one or both parties, so it is better to look for win-win situations. You can do this in the following ways:

- *Recognize that everyone wants to win.* Then, understand what constitutes a winning situation for each individual. Money, power, and recognition contribute to winning conditions for most people, but other more subtle conditions exist, such as job satisfaction, a feeling of belonging, and moral fulfillment.
- *Establish reasonable expectations.* I can't emphasize enough the importance of setting reasonable and mutually fulfilling expectations in every aspect of human relations. Then, ensure that each individual's task assignments support his or her win conditions.
- *Facilitate the interactions.* Provide an environment supporting the fulfillment of people's win conditions. This environment can come in various forms, such as financial incentives, group activities, and communication sessions to head off problems.

Win-win software process. Structuring a win-win software process means setting up a system that will lead to success. This includes establishing a realistic process plan based on

some standard methodology, whether internal, company-wide, or off the shelf.

Using the plan to control the project is also important. It has been said that "the plan is nothing; planning is everything." Too often, managers develop a plan to sell the job to senior management or the customer, and then throw the plan away once they sell the project. Instead, they should use and maintain the plan throughout the project's life.

As a project manager, you need to remain aware of risks that can lead to win-lose or lose-lose situations. Make sure you identify and eliminate these risks as soon as possible. For example, in awarding a choice work assignment to one person over another, clearly a win-lose situation is established. It is imperative in this case to speak with the person not chosen to give him the reasons for the decision and to assure him that he is valued. Similarly, the person who was given the assignment needs to understand the reasons why, and at the same time she must be cautioned not to create resentment in flaunting the "win." She must also be told to value the other employee and include him in the assignment where possible.

Keeping people involved is essential. It improves communications and keeps team members invested in the project. Listen to your fellow team members; they probably have great ideas.

Win-win software product. Structuring a win-win software product refers to the specification writing process. Matching the customers' and software maintainers' win conditions is key. This process includes careful expectation setting.

Theory W might work in our restaurant's case because it's consistent with the successful strategy previously described. Also, by maintaining a consistent, pleasant work experience for the chefs and staff and a similar dining experience for the customers, all in keeping with the established and publicized restaurant theme, then success is likely if not probable.

PRINCIPLE-CENTERED LEADERSHIP

All management approaches discussed thus far focus on organizational frameworks for management. Principle-centered leadership focuses on the manager's behavior as an agent for change, according to consultant

Other Management Concepts and Substrategies

Although not specifically articulated in the several management styles I've discussed here, successful managers often employ the following concepts and substrategies.

- ***Employ management by sight.*** **Also known as management by walking around, management by sight is a substrategy for use with any management style. This technique is people oriented because it requires managers to be very visible and to interact with staff. Interacting with staff at all levels is a good way for managers to collect important information about projects and the people working on them. Management by sight is obvious. Use your eyes and ears, and be visible. Incorporate this strategy into any management approach that you adopt. Like a restaurant manager, an IT manager needs to spend a lot of time interacting with staff at all levels.**

- ***Deal carefully with difficult people.*** **Dealing with difficult people, whether subordinates, peers, or superiors, is a challenge facing every manager. How you deal with difficult people is largely personality-based, but don't form an opinion about a person or situation too soon. Never attribute some behavior to malice when a misunderstanding could be the reason. Almost without exception, taking the time to investigate an issue and thinking about it calmly is superior to reacting spontaneously or emotionally. The article by Jeffrey Voas, "The Pitfalls of Managing a Superstar" (*IT Professional*, Mar.-Apr. 2001, pp. 65-67), presents a good case study in dealing with one type of difficult person. Whichever management style you use, make sure that you focus on issues and not personalities. You can work on this by avoiding demeaning actions such as telling people that they are incompetent. Focus instead on your feelings about the situation. Make sure you listen to all sides of the story when arbitrating a dispute.**

- ***Always work to set or clarify expectations.*** **Management failures, parental failures, marital failures, and others are generally caused by a lack of clear expectations. Set expectations early in the process, make sure that everyone understands them, and continue monitoring the expectations and refining them if necessary.**

- ***Find mentoring opportunities.*** **You can foster good team dynamics through mentoring (Frank J. Armour and Monica Gupta, "Mentoring for Success," *IT Professional*, May-June 1999, pp. 64-66) and most of the best managers you probably know also fit the description of a mentor. The positive behaviors that I described earlier in this article are generally those of someone who has a mentoring personality.**

Stephen R. Covey (*Principle Centered Leadership*, Simon & Schuster, 1992). Current management theory holds that motivating team members by example and leadership—rather than hierarchical application of authority—is much more effective. Managers manage things, but lead people.

A key concept in principle-centered leadership is that the best managers are leaders and the only way to affect change is for managers to first change themselves.

Principles are more important than values. Values are society based; they change over time and differ from culture to culture. Principles are more universal and lasting. Think of old principles, such as the Golden Rule. These are timeless and transcend culture, so differ from values, according to Covey.

Another example of a timeless principle is "You reap what you sow." This holds true when dealing with people. Treat people with respect, and they will respect you. Fail to respect people, and they will not respect you.

In fact, principle-centered leadership and Theory W are very similar; principle-centered leadership is more generic. So it is likely that a good manager applying principle-centered leadership has a shot at saving the restaurant. Why? It is going to take a great deal of inner strength, honesty, and character to make the needed changes in the restaurant. These include articulating the vision and theme, providing leadership, mentoring, and possibly fair but strong discipline. The manager will need commitment to deal with strong-willed chefs who may oppose change, and have the self-assurance to replace chefs, even superstars, if needed. All of this will take time and the manager will need to be patient and avoid the temptation to seize apparent quick fixes that may result in long-term, adverse side effects. The manager will have to work hard, be sensible, fine tune without meddling, coach without smothering, and be consistent and fair all around. At the same time, the manager must keep focus. Many management theorists believe that the only way to succeed in all these things is to be a person of solid character and possessing inner strength.

An old proverb holds that "If all you have is a hammer, everything is a nail." When it comes to using a management style, some managers are purely one style—whether Theory X, Y, Z, or another. But you can't use the same technique with everyone—each person has different sources of motivation. Moreover, your own personality will probably determine which style you tend to use.

Be an optimist. No one chooses to be a failure. In fact, MacDonald notes that most IT types (he calls them programmers) are optimists. Try to give people the benefit of the doubt and work with them. After all, you would want this for yourself. ■

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